

# CEL-600 Series



## Digital Sound Level Meters



## Introduction

The CEL-600 series sound level meters use the latest digital technology to give standards of performance never seen in such a compact design.

Using a high resolution colour TFT display, the CEL-600 series is specifically designed to ensure taking noise measurements is quick and easy.

Different models are available depending on your requirements for use in general workplace noise measurements, up to full industrial hygiene requirements where octave band analysis is required for the effective selection of hearing protection.

Octave band measurement screen



## Key Features

- Compact, rugged design
- Simple operation
- Single large measurement range
- Large memory
- High resolution colour display
- Real-time octave band analysis
- Simultaneous measurement of all workplace noise parameters
- Instrument menu in 7 languages
- Pre-defined and user configurations available
- Automatic calibration function
- Long battery life

## Applications

- Workplace noise assessments
- Selection of hearing protection
- Calculation of noise exposure
- Ensuring compliance with workplace noise legislation
- Machinery noise tests

## High Resolution Colour Display

- Unique colour coding of measurements
- Bright backlight
- View in all light conditions

The CEL-600 series uses colours of the high-resolution display to aid the user in making measurements. Measurement screens are colour coded depending on the mode of operation. For example, during a measurement run, the header and footer of the display is green (shown right), whereas when a run is stopped they are red, similar to traffic lights for 'stop' and 'go'.

Measured parameters are displayed in different colours, and the bar graphs are illustrated with the same colours to give an easy understanding of the noise climate.

Broadband measurement



## Simple Operation

- Intuitive menu structure
- Multilingual user interface
- Predefined and user selectable setups

The CEL-600 series was designed with ease of use in mind. The menu structure is designed to pick up and use without the use of a manual. A simple icon structure is used with word prompts for each selection, available in seven languages.

The instrument has six selectable setups. Four pre-defined setups can be used to satisfy local workplace noise legislation. Two user setups can be defined to display parameters and weightings as required. Regardless of the setup used, the CEL-600 series measures and stores all parameters and weightings even if not selected. These can be viewed if necessary on the software.

Up to 100 measurements can be stored without the need to download. All runs are date and time stamped.

When connected to a PC via the USB connection, the CEL-600 series acts like a memory card, so data files can be moved to a PC and easily reviewed without the need for proprietary software.



Set-up selection

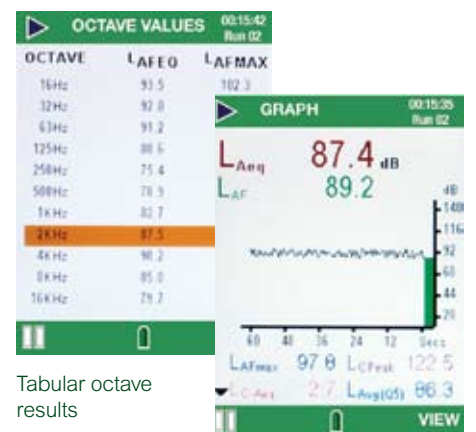
## Digital Technology

- Large measurement range
- Simultaneous measurement
- Automatic calibration
- Real-time octave band analysis

By using Digital Signal Processing (DSP) technology, the CEL-600 series measures all the workplace noise parameters simultaneously with necessary time and frequency weightings, preventing incorrect setup of the instrument. The instrument has a single large measurement range of 20-140dB, eliminating the need to change measurement range and preventing errors.

On the CEL-620B model, octave analysis is performed in real-time, saving time compared to performing measurements sequentially.

Octave band results are shown in both bar-graph and tabular form with the dominant frequency highlighted. Time history of the broadband noise level is displayed in real-time, so a user can see how the noise level varies with time.



Tabular octave results

Time history display

## Instrument Range

- Range of instruments available
- Future proof upgrade ability
- Complete measurement kits
- All models available in Class 1 or Class 2

The CEL-600 series comprise of the CEL-610, CEL-620A and CEL-620B. The CEL-610 measures instantaneous and maximum sound pressure levels. CEL-620 models are also integrating so measure average noise levels as well as peak levels for workplace noise legislation. CEL-620A model also simultaneously measures the L<sub>C</sub> and L<sub>A</sub> used within the HML method for the selection of hearing protection. In addition, the CEL-620B model performs real-time octave band analysis from 16Hz to 16kHz, values which are used in the octave band method for selection of hearing protection.

If future requirements change, any instrument can be upgraded to a higher model without returning to Casella.

Complete measurement kits are provided with an acoustic calibrator in a robust kit case complete with instruction manuals and calibration certificates.



## SPECIFICATION

### Applicable Standards:

IEC 60651 - 1979  
 IEC 60804 - 2000  
 IEC 61672 - 2002  
 ANSI S1.4 -1983 (R2006)  
 ANSI S1.43 - 1997 (R2007)

Octave filters (CEL-620B model only):  
 IEC 61260 Class 0  
 ANSI S1.11-2004

### Technical:

Total measurement range: 20 to 140dB RMS (single range), 143.0 dB Peak  
 Frequency weightings RMS: Simultaneous A, C & Linear (Z)  
 Frequency weightings Peak: Simultaneous A, C & Linear (Z)  
 Time weightings: Simultaneous Slow, Fast & Impulse  
 Amplitude weightings: Q3, Q4 and Q5 (Q4 & Q5 applicable to  $L_{avg}$  only)  
 Thresholds: 70 to 90 (dB) in 1 dB steps (applicable to  $L_{avg}$  only)  
 Noise floor: <33dB(A) Class 2, <25dB(A) Class 1  
 Runs stored: 100  
 Display: 320x240 pixel transmissive colour TFT  
 Frequency bands: 11 octave bands 16Hz to 16kHz (CEL-620B model only)  
 Calibration information: Stores pre and post run calibration date, time and level  
 Output (P.C.): USB 2.0 'A' to 'Mini B'  
 Batteries: 3 x AA Alkaline (supplied) or rechargeable  
 External power: 9-14V DC at 250mA via 2.1mm connector  
 Battery life: 11 hours with backlight on, 20 hours backlight off  
 Tripod mount: 1/4" Whitworth socket  
 Size mm (in): 72 x 229 x 31mm (2.8 x 9.0 x 1.2")  
 Weight gm (oz): 295g (10.4oz)

### Measured Parameters:

CEL-610  
 $L_{XY}$ ,  $L_{XYmax}$

CEL-620A  
 $L_{XY}$ ,  $L_{XYmax}$ ,  $L_{XYmin}$ ,  $L_{Xeq}$ ,  $L_{Xpeak}$ ,  $L_{avg}$ ,  $L_C$ ,  $L_A$ ,  $L_{Xleq}$ ,  $L_{TM3}$ ,  $L_{TM5}$ ,  $L_{AE}$

CEL-620B  
 $L_{XY}$ ,  $L_{XYmax}$ ,  $L_{XYmin}$ ,  $L_{Xeq}$ ,  $L_{Xpeak}$ ,  $L_{avg}$ ,  $L_C$ ,  $L_A$ ,  $L_{Xleq}$ ,  $L_{TM3}$ ,  $L_{TM5}$ ,  $L_{AE}$

Octaves:  $L_{XY}$ ,  $L_{Xeq}$ ,  $L_{XYmax}$

Where X is the frequency weighting A, C or Z and Y represents time weighting Fast (F), Slow (S) or Impulse (I).

All weightings simultaneously measured where appropriate.

### Environmental:

In operation: Relative humidity of 5% to 90% (non-condensing)  
 Temperature 0 to 40°C (class 2), -10 to 50°C (class 1)  
 Atmospheric pressure of 65 to 108kPa  
 In storage: Relative humidity of 5% to 90% (non-condensing)  
 Temperature -20 to 60°C  
 Atmospheric pressure of 65 to 108kPa

## ORDERING INFORMATION

CEL-610/2: Digital Sound Level Meter (Class 2)  
 CEL-620A/2: Integrating Digital Sound Level Meter (Class 2)  
 CEL-620B/2: Integrating Octave Band Sound Level Meter (Class 2)

CEL-610/1: Precision Digital Sound Level Meter (Class 1)  
 CEL-620A/1: Precision Integrating Digital Sound Level Meter (Class 1)  
 CEL-620B/1: Precision Integrating Octave Band Sound Level Meter (Class 1)

All instruments and calibrators are provided with calibration certificates. Casella CEL also has a UKAS calibration facility if required.

## INSTRUMENT KITS

Complete kits are available with acoustic calibrator (CEL-110), kit case, windshield, instruction manuals and USB cable. For a complete instrument kit add /K1 to the part number e.g. CEL-610/2/K1. A typical instrument kit is pictured on the right.



## OTHER ACCESSORIES

CEL-6840 Standard kit case  
 CEL-6843 Executive kit case  
 CEL-6841 Windshield  
 CEL-110/1 Acoustic Calibrator Class 1  
 CEL-110/2 Acoustic Calibrator Class 2C

CEL-6718 Lightweight tripod  
 CEL-251 Microphone Class 1  
 CEL-252 Microphone Class 2  
 PC18 Universal power supply  
 CMC51 USB download cable

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